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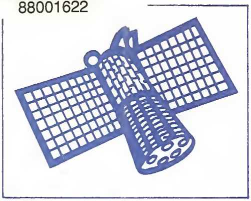
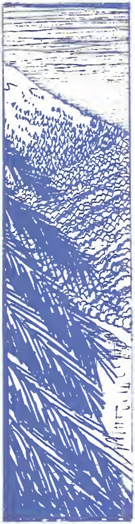
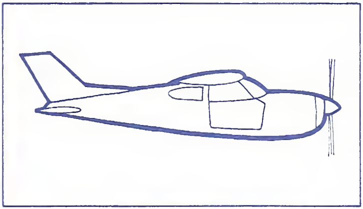
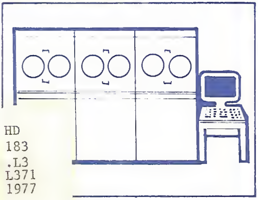




PHASE I DRD
Unit Resource Analysis





HD
183
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BUREAU OF LAND MANAGEMENT

User Requirement Specifications

Energy and Minerals

#12982492
ID 88001622

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USER SPECIFICATIONS
FOR A
MINERAL RESOURCE INVENTORY
AND
UNIT RESOURCE ANALYSIS
DATA SYSTEM

PHASE I
DETAILED REQUIREMENTS DEFINITION

OCTOBER, 1977

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IN ORDER TO VISUALIZE THE GENERAL CONCEPT OF INTERFACING WITH A LARGE SCALE AUTOMATED SYSTEM, THE REVIEWER(S) OF THIS DOCUMENT SHOULD BE FAMILIAR WITH THE "USER INTERFACE INTRODUCTION" UNDER SEPARATE COVER.

The following persons, from the offices indicated, contributed to the Phase I DRD effort, Mineral Resource Inventory and URA Steps 3 and 4. Their participation in the program is appreciated.

TEAM 1, August 2-13, 1976

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Rebb Bennett	Carson City District Office
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TEAM 2, August 23-September 3, 1976

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HAROLD F. YORK
DRD Coordinator for Minerals

MINERALS

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Introduction

The purpose of this document is to set forth a system concept as it has evolved from the DRD. It should be remembered that the outputs of mineral information were restricted to the data displays required by the Mineral Resource Inventory and the Unit Resource Analysis, either as specified or implied. Consequently, the identified products should be reviewed in this context. However, the data necessary to produce these products has application in most aspects of the minerals program. For example, the tables required for the Public Land Statistics can be produced from the data base although they are not specifically shown as an output.

The review should, at a minimum, comment on the questions posed in the Summary of Review Questions. The system concept will be adjusted as necessary to incorporate these, and other, comments into a final User Requirements Specification. Undoubtedly, there will be new elements added and procedural changes made as the System Design takes place; however, the basic concepts should not change once they have been finalized. In any case, the final design document that will reflect any new procedures or new forms will be subject to review prior to implementation.

It must be emphasized that systems development is evolutionary in nature. Initially, an attempt will be made to implement the best solution based on the understanding developed in the DRD; however, hands-on experience with a new system will soon precipitate changes and enhancements. This is to be expected and should be planned for. Perhaps these can be identified in yearly review conferences that would help shape the future evolution based on current experience.

General Description of the Data Sets

Experience gained through the DRD effort indicates that the Minerals Data Base should contain data from the following subject areas:

1. Deposit Data.

This data set identifies location, ore body descriptors, commodity, amounts, grades, number and kinds of wells, year of exploration, discovery method, area, and environmental sensitivity.

The Minerals staff would use the references at its disposal; i.e., journals, professional contacts, personal observation, etc., to identify known mineral occurrences and fill the data elements for their area, as appropriate. In addition, data concerning the economic aspects of extraction will be determined to provide reports on available reserves. This will necessitate storage of reserve data by requisite extraction method, whether underground or surface mining, in order to differentiate between the relative costs of production, and therefore the economic feasibility of exploitation.

The economic ranking of the occurrence will be determined by a modification of MINSIM, a model developed by Bureau of Mines (see Economic Ranking of Reserves Output). Economic ranking is determined by manipulation of such descriptive parameters as probable mining method, available processing procedures, transportation costs and selling price. This will lead toward the classification of deposits as economic or submarginal. Paramarginal resources can be determined by legal standards appropriate to the area. Undiscovered resources can be determined by the association of the regional geology with existing mineral occurrences and will be treated as mineral occurrences which are hypothetical or speculative.

Deposit data may be augmented to any degree desirable by automated sources from other agencies. For example, the Bureau of Mines has a data base containing over 60,000 records on mineral occurrences, mines and processing facilities. In additon, the Geological Survey has about 30,000 records of a similar nature. The extent of the usage of these sources must be decided upon so that appropriate agreements and procedures can be developed prior to System Design.

Mine/well data will be associated with the deposit data to provide a basis for the exploitive activity. Analytical data may also apply to the commodity or commodities in the deposit.

2. Facility Data-Set

Facility data addresses the processors that are available in the area. This set will contain information about the location, owner/operator, type of process, plant capacity and cost, and will be used, largely, in the economic analysis of mineral occurrences. This data should be maintained at a higher organizational level, such as the State Office, because a given facility could service mining operations from various Districts or Resource Areas. This would help eliminate conflicting data sources and duplication of effort.

3. Mining Claim, Lease and Facilities Data Set

This identifies mining claims or leases that are not found in the Lands records system, i.e., activity on state and private land. In additon, processing and mine facilities are located, as well as areas of special consideration, such as areas under the purview of Public Law 167. If not accomplished by another program, Known Leasing Areas will also be input. This will be the primary input of graphic data for the mineral system. It

is essential to input graphic boundaries or locations of interest to the Minerals Staff that are not handled elsewhere. This will require some investigative work on the part of the Staff since the data may reside in governmental offices at the county and state level.

4. Analytical Data Set

Data incorporated into this set identifies commodity and sample analysis information. These are critical to quality or grade determinations which have a direct bearing on the profitability or usability of the commodity.

Analytical data may be relatively abundant or relatively scarce--depending on the commodity in question. The US Bureau of Mines maintains an ongoing program of coal analysis with over 90,000 analyses currently available. Substantial numbers of petroleum analyses are also available from the Bureau of Mines. Analyses of non-energy minerals most commonly reside with private organizations and may not be readily available.

Due to the variety of minerals involved, it is not practical to identify a data element for every possible attribute of every possible commodity. Therefore, a data structure is used to allow the identification of the attribute as well as the associated measurements of that attribute. In some cases, other parameters, such as use, will be identified along with the physical or chemical attributes.

The data will be tied to the mineral occurrence data set. Not only will it be used in making an economic/subeconomic distinction but can also be used to determine paramarginal resources resultant from physical or chemical properties. The data must be retained over a period of time so that the economic status of the occurrence can subsequently be judged in light of changing economic and legal conditions.

5. Mine/Well Data Set

Each mineral-producing activity in the area will be identified. Data elements concerning location, ownership, operating status, mine characteristics, etc., will be developed independently of the deposit data. Elements concerning the wells will be formulated so that they are not present in records about mines and vice versa. This data set will also contain information about the mineral material sites which will basically be treated as a mine operated by BLM.

The mine/well set is the heart of the data base with other sets basically being logically tied to it. For example, if the mine/well occurs in a deposit, analytical data may or may not be tied to the mine data depending on the source of the sample. Production data is associated with the mine/well data set. Again, Bureau of Mines and USGS systems have data that has applicability to this data set.

6. Production Data Set

Production data includes the commodity, quantity and value of the mine/wells. It will be maintained on an annual basis for each operating mine/well that has been identified in the area. However, in order to ensure the capture of meaningful production data, comprehensive sources of data will have to be established.

Production statistics on leasable minerals are compiled by the US Geological Survey. Arrangements must be made with that agency to acquire the proper quantity and value data for incorporation into the BLM system. Production data on locatable minerals may be available from the US Bureau of Mines or from state agencies charged with the collection of this information. Data in this category would most likely be of a proprietary nature;

it would be incumbent upon BLM to preserve the confidential nature of that information when it is obtained.

This data will be associated with a mine or well as described in the mine/well data set.

7. Regional Geology Data Set

This data set identifies features of geologic structure, lithology, geomorphology and observed anomalies. These are items that may provide clues to the Minerals Staff and enable them to speculate about undiscovered resources. This will be a stand-alone graphic data set that does not directly relate to an attribute data set. It will require the staff to identify those geologic attributes that are meaningful but not distinctly shown on the base map.

8. Minerals Materials Data Set

This data set identifies location, user, commodity, quantity, price and disposal method of mineral materials. It is derived from the sales report and would be input after each sale. It will be necessary to modify the existing sales report forms, 5440-13 and 5450-5.

This data would be associated with the mine/well data set that describes the mineral material sales site.

9. Reference and Comments Data

Provides a medium for the Minerals Specialist to express additional information or sources of information. This allows the specialist to enter data where data elements are not available for input of items that are of interest. This will also enable the specialist to identify the source of data that might be controversial or in need of defense at some later date.

These data sets will be augmented by data from other programs. For example, temperature, precipitation, soil and land use data will be acquired from other programs such as Watershed, Range or Lands, as appropriate. This is shown by the inputs that are enclosed by parentheses in the Information Flow Diagram.

SUMMARY OF REVIEW QUESTIONS

The following is a list of review questions that should be addressed, at a minimum. Of course, any other comments or suggestions will be incorporated into the final User Specification. However, it is felt that these areas are important enough to be addressed, specifically:

A. Nine data sets of information have been identified as pertinent to the minerals data base. These data sets are directed toward the geologic, economic, legislative and technologic considerations of mineral occurrences and potential for development. Within the scope of these four concepts are the provisions for data pertinent to such ancillary features as mines, mills, wells, transportation and production.

    1. Do these data sets adequately cover the Minerals Resource Inventory requirements?

B. The Bureau of Mines collects production and value data for virtually all mineral producers. The exception is coal operators conducting small operations. This information is collected on a voluntary basis. State agencies also collect mineral data. Usually, the state canvasses all producers, regardless of size, and compliance is mandatory. The USGS collects production and value information on leasable minerals. BLM collects production and value information on saleable minerals. Mineral production and value information are usually classified or proprietary information. "Company Confidential" information will have to be protected if it would reveal the operations of an operator. However, where three or more operators are involved, the information may be aggregated in such manner as to conceal the operations of the individual operator.

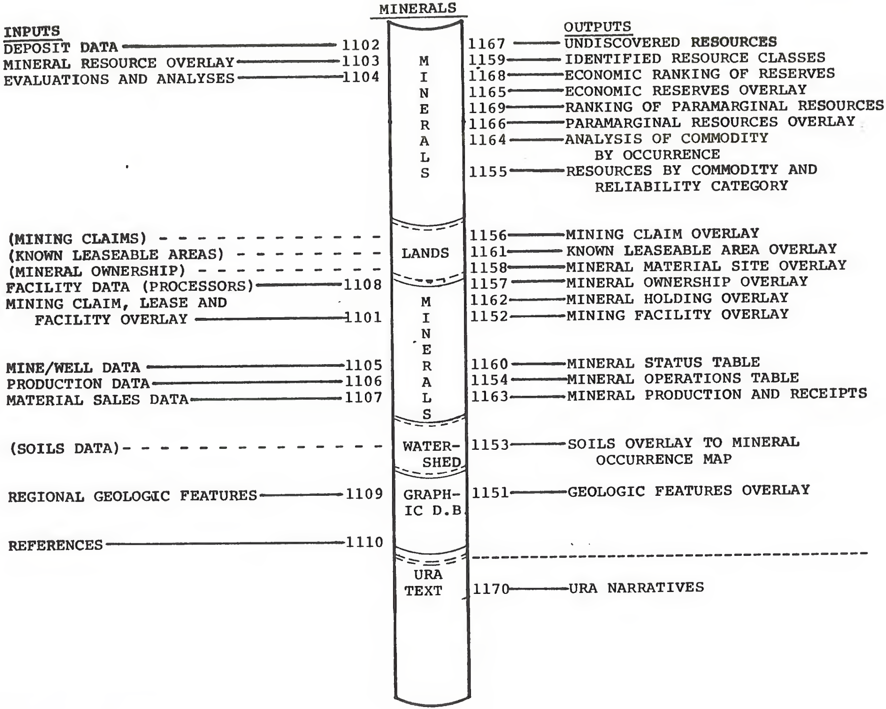
2. Should BLM try to maintain specific production and value data about individual mining operations?

3. If so, should BLM attempt to get magnetic tapes of this data from Bureau of Mines and/or U.S. Geological Survey?

4. In general, to what extent should BLM utilize the automated sources that might be available from Bureau of Mines and USGS? Should negotiations be made with local or state agencies for similar data?

C. MINSIM is a modeling program used by the Bureau of Mines. It is flexible and shown to be workable. It has been used by BLM in the past for certain applications and presumably would be available in the future. The alternative would be to develop a similar program for BLM purposes. A flow chart of MINSIM is shown with the output description - Economic Ranking of Reserves.

5. Should BLM attempt to acquire MINSIM for incorporation into any system that is developed?


MINERALS
INPUTS
DEPOSIT DATA 1102
MINERAL RESOURCE OVERLAY 1103
EVALUATIONS AND ANALYSES 1104
(MINING CLAIMS)
(KNOWN LEASEABLE AREAS)
(MINERAL OWNERSHIP)
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MINE/WELL DATA 1105
PRODUCTION DATA 1106
MATERIAL SALES DATA 1107
(SOILS DATA)
REGIONAL GEOLOGIC FEATURES 1109
REFERENCES 1110
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LANDS
MINERALS
WATER-SHED
GRAPHIC D.B
URA TEXT
OUTPUTS
1167 UNDISCOVERED RESOURCES
1159 IDENTIFIED RESOURCE CLASSES
1168 ECONOMIC RANKING OF RESERVES
1165 ECONOMIC RESERVES OVERLAY
1169 RANKING OF PARAMARGINAL RESOURCES
1166 PARAMARGINAL RESOURCES OVERLAY
1164 ANALYSIS OF COMMODITY BY OCCURRENCE
1155 RESOURCES BY COMMODITY AND RELIABILITY CATEGORY
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1161 KNOWN LEASEABLE AREA OVERLAY
1158 MINERAL MATERIAL SITE OVERLAY
1157 MINERAL OWNERSHIP OVERLAY
1162 MINERAL HOLDING OVERLAY
1152 MINING FACILITY OVERLAY
1160 MINERAL STATUS TABLE
1154 MINERAL OPERATIONS TABLE
1163 MINERAL PRODUCTION AND RECEIPTS
1153 SOILS OVERLAY TO MINERAL OCCURRENCE MAP
1151 GEOLOGIC FEATURES OVERLAY
1170 URA NARRATIVES

Input/Output Descriptions

Ten input documents have been identified as required for creation and maintenance of the Minerals data base. The frequency and volume figures are estimates of an operational system and therefore do not indicate the volume of data required to initially load the data base. In some locations this maybe a considerable effort, but may be offset to some extent if automated sources area used.

The prospective automated sources that have been identified are from Bureau of Mines and US Geological Survey. These are shown below:

System	Agency	Description
Computer Resources Information Bank (CRIB)	USGS	Describes one or more mineral commodities or one or more deposits. Some topics covered are: location, production, reserves, potential resources and references.
Minerals Availability System (MAS)	BuMines	Defines the physical and commercial availability of mineral resources. Known resources are evaluated and classified by deposit. In addition, Mining, Processing and Transportation data are included.
Fuels Availability System (FAS)	BuMines	Similar to MAS but is concerned with petroleum and coal resources.

These are possible sources of data but Input Description sheets have not been included because the exact data-exchange relationship to these agencies has not been finalized.

The data entry formats and procedures will be determined during System Design based on the architecture of the new computer and the data base system available on it. However, they will be subject to review prior to implementation.

Twenty outputs have been identified. This does not imply that these are the only outputs that can be generated. They are the initial goal of the System Design phase. There will be an "English language" query capability for ad hoc reports.

The URA narrative will be based on the analysis of the Minerals data base. Until they are changed, the requirements of the URA manual (1605) are still the guidelines that should be followed. The automated system will provide, at a minimum, the supporting tables and overlays. However, the generation of the narrative may be aided by the text processing capability of the new computer.

Prog. Area: 0111
Prep. By:
Date:

I/O # 1151

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: Geologic Features Overlay

OUTPUT FORM: Graphic Display

OUTPUT DESCRIPTION: A display of the structure, lithology, geomorphology and anomalies in the area.

USER(s): Mineral Specialist; Recreation Personnel; Watershed Personnel

LOCATION(s): Area, District, State Offices

USAGE: Mineral potential areas, Cultural sites, Water resource areas and areas that might impact on planning.

ACCESS LIMITATIONS: None

RESPONSE TIMES: DESIRED: Overnight REQUIRED: 1 week

FREQUENCY OF PRODUCTION: 1-2 per Planning Unit per year.

DEPENDENCIES: Mineral Reports, Special Projects, URA, Environmental Statements

REQUEST PARAMETERS: Planning Unit or other specified area.

I/O #1151

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: Geologic Features Overlay

SORT ORDER: NA

ESTIMATED VOLUME: 1-2, Depending on scale

COMPUTATIONS/PROCESSES: None

ACCURACY:

SCALE: Must overlay Base Map.

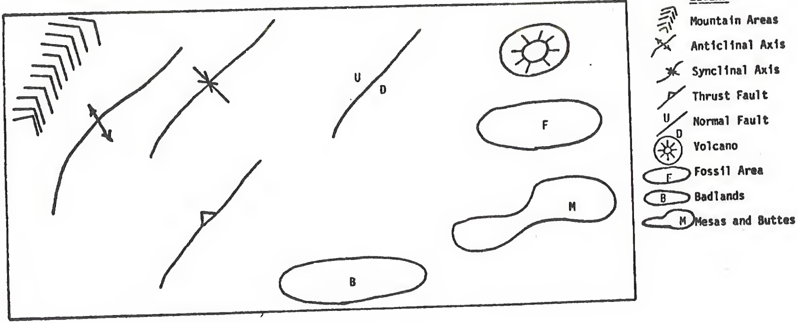
ANNOTATIONS: Use USGS standards where possible.

LEGEND: Legend of symbol meaning to be provided on request.

REMARKS:

I/O #1151

Geologic Features Overlay West Park Planning Unit



Prog. Area:
Prep. By:
Date:

I/O # 1152

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: Mining Facilities Overlay

OUTPUT FORM: Graphic

OUTPUT DESCRIPTION:

USER(s): Mineral Specialist

LOCATION(s): Area, District, State Offices

USAGE: Planning, Mineral Evaluation, Special Projects

ACCESS LIMITATIONS: None

RESPONSE TIMES: DESIRED: Overnight REQUIRED: 1 week

FREQUENCY OF PRODUCTION: 1 to 2 per year per Planning Unit.

DEPENDENCIES: URA, Special Projects, Mineral Evaluation

REQUEST PARAMETERS: Location, type of facility, operational status.

I/O # 1152 OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: Mining Facilities Overlay

SORT ORDER: NA

ESTIMATED VOLUME: 1-4 pages, depending on scale.

COMPUTATIONS/PROCESSES: None

ACCURACY: Must overlay Base Map.

SCALE:

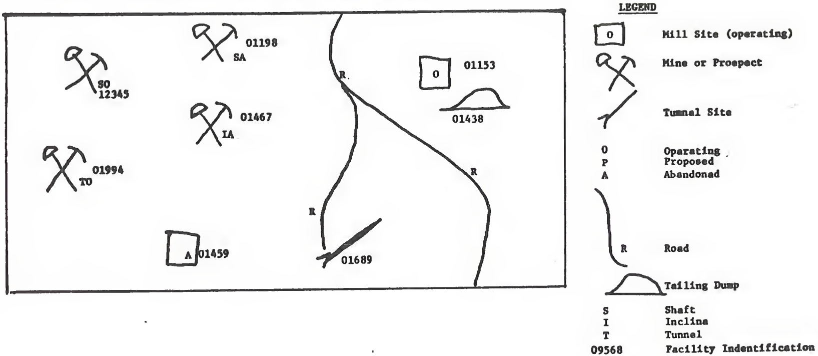
ANNOTATIONS: Use standard BLM or USGS mapping symbols to show locations.

LEGEND: Legend of symbols on demand.

REMARKS: Roads overlay must also be shown.

(This may be combined with Mining Claim overlay if volume warrants.)

I/O #1152 **Mining Facilities Overlay West Park Planning Unit**



I/O # 1152

MINING FACILITIES OVERLAY

State, Administrative	0100 - 0004
District	0100 - 0543
Resource Area	0100 - 0418
Planning Unit	0100 - 1075
Type, Mineral Facility	0111 - 2269
Status, Operational	0111 - 2304
Identification, Mine	0111 - 2395
Transportation Network	0132 - 2703

Prog. Area: ______________
Prep. By: ______________
Date: ______________

I/O #1153

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: Soils Overlay to Minerals Occurrence Map

OUTPUT FORM: Graphic Display

OUTPUT DESCRIPTION: An overlay of soil types on the mineral occurrence overlay.

USER(s): Minerals personnel concerned with mined-land reclamation.

LOCATION(s): Areas, Districts, State

USAGE: Reclamation determinations.

ACCESS LIMITATIONS: None

RESPONSE TIMES: DESIRED: Overnight REQUIRED: 1 week

FREQUENCY OF PRODUCTION: Per Planning Unit: 1-2 per year.

DEPENDENCIES: URA, Special Projects, Mineral Evaluation

REQUEST PARAMETERS: Location of mineral occurrence or Planning Unit.

I/O #1153 OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: Soils Overlay to Minerals Occurrence Map

SORT ORDER: NA

ESTIMATED VOLUME: 1-4 pages, depending on scale.

COMPUTATIONS/PROCESSES: Soils data from Watershed data base will be used to overlay the mineral occurrence data base from Mineral.

ACCURACY: Must overlay base map.

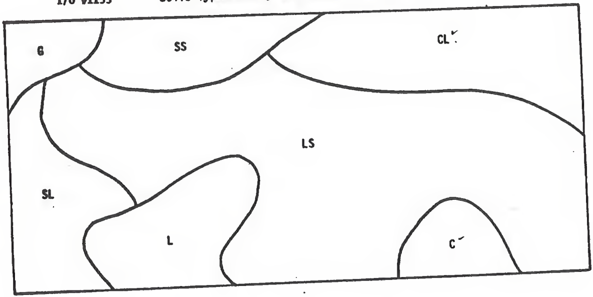
SCALE:

ANNOTATIONS: Use standard symbols provided by Watershed.

LEGEND: Legend of Soil types upon request.

REMARKS: This data will be provided by Watershed. However, they hold the data in a much more specific manner which might require a conversion routine.

I/O #1153 Soils Type Overlay West Fork Planning Unit



LEGEND

G	Gravel
SS	Sand & Silt
SL	Sandy Loam
L	Loam
LS	Silt Loam
CL	Clay Loam
C	Clay

I/O #1153 SOILS OVERLAY TO MINERALS OCCURRENCE MAP

State Administrative	0100 - 0004
District	0100 - 0543
Resource Area	0100 - 0418
Planning Unit	0100 - 1075
Soil, Horizon Boundary	0141 - 4686
Taxonomic Soil Unit	0141 - 4683
Name, Soil Mapping Unit	0141 - 4601
Boundary, Mineral Occurrence	0111 - 2364

Prog. Area: ______________
Prep. By: ______________
Date: ______________

I/O #1154

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: Table of Mineral Operations

OUTPUT FORM: Data Display

OUTPUT DESCRIPTION: A table describing mineral operation in the area of interest. It could include owner name and cumulative production.

USER(s): Minerals Specialist LOCATION(s): District, State

USAGE: Special projects, URA, Mineral evaluations

ACCESS LIMITATIONS: None

RESPONSE TIMES: DESIRED: Overnight REQUIRED: 1 week

FREQUENCY OF PRODUCTION: Per planning unit: 1 - 2 per year.

DEPENDENCIES: Environmental statements, special reports, mineral evaluations

REQUEST PARAMETERS: Planning unit or other areal parameters and commodity.

I/O #1154

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: Table of Mineral Operations

SORT ORDER: Owner/Operator

ESTIMATED VOLUME: 5-10 pages, depending on area.

COMPUTATIONS/PROCESSES: Using production figures for all years, calculate the cumulative production.

ACCURACY: N/A

SCALE: N/A

ANNOTATIONS: N/A

LEGEND: N/A

REMARKS:

I/O #1154

Mining Operations, Commodity and Mine Status
East Park Planning Unit

Owner or Operator	Mine Name	Location	Commodity	Type Mine	Status	Last Year of Production	Cumulative Production	Unit of Production
Heater Corp.	Clara #1	Sec. 12 T23N R18W	Coal	Strip	Operating	1967	300,000	Ton
Dig, Inc.	Bullpen	Sec. 18 T17N R11W	Copper	Open Pit	Idle	1955	38,500	Pounds

I/O #1154

MINERAL OPERATIONS TABLE

State, Administration	0100 - 0004
District	0100 - 0543
Planning Unit	0100 - 1075
Name, Owner/Operator	0111 - 2288
Name, Mineral Variety	0111 - 2308
Location	
Township	0100 - 1695
Range	0100 - 1699
Section	0100 - 2501
Legal Description - Aliquot Part	0121 - 2502
Commodity, Mineral	0111 - 2303
Mining Method	0111 - 2420
Status, Operational	0111 - 2304
Year, Last Production	0111 - 2483
Unit of Measure, Production	0111 - 2462
Cumulative Production	Computed

Prog. Area: 0111
Prep. By: HFY
Date: 12 July 77

I/O #1155

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: Resources by Commodity and Reliability Category

OUTPUT FORM: Tabular

OUTPUT DESCRIPTION: Tabulation of commodity tonnages by reliabality category and type of mining.

USER(s): Minerals Staff
Economist

LOCATION(s): Area, District, State Office

USAGE: Mineral Inventory, Environmental statements, special projects.

ACCESS LIMITATIONS: Proprietary information on reserves will be restricted.

RESPONSE TIMES: DESIRED: Overnight REQUIRED: 1 week

FREQUENCY OF PRODUCTION: Planning unit, District or Resource area: 1 to 2 per year.

DEPENDENCIES: Minerals Inventory, special projects, Resource appraisals

REQUEST PARAMETERS: District, Plannint Unit or other areal parameters and commodity.

I/O #1155

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: Resources by Commodity and Reliability Category

SORT ORDER: Commodity, planning unit and name of mineral property

ESTIMATED VOLUME: 5-10 pages

COMPUTATIONS/PROCESSES: Identify tonnages in each reliability category and total by category and by mineral occurrence.

ACCURACY: Round tonnage value to nearest one thousand.

SCALE: N/A

ANNOTATIONS: N/A

LEGEND: N/A

REMARKS: Any commodity can be requested for the area of interest.

I/O 1155

Any State
Any Identified Area

RESOURCES AND RESERVES OF SUBBITUMINOUS COAL BY MINING METHOD AND RELIABILITY CATEGORY
(Thousand Tons)

District	Measured	Indicated	Inferred	Total
Planning Unit Long				
Coalbed No. 8				
Deep	789	12877	1269211	1282877
Strip	66	7877	176303	184246
Sub Total	855	20754	1445514	1467123
Planning Unit Short				
Deep	987	2136	63120	66243
Strip	123	246	6420	6789
Sub Total	1110	2382	69540	73032
Total	1965	23136	1515054	1540155

I/O #1155 RESOURCES BY COMMODITIES

State, Administrative	0100 - 0004
District	0100 - 0543
Resource Area	0100 - 0418
Planning Unit	0100 - 1075
State, Geographic	0100 - 0690
Commodity, Mineral	0111 - 2303
Name, Mineral Property	0111 - 2308
Resources, Reliability Category	0111 - 2474
Quantity, Mineral Resources	0111 - 2417

Prog. Area: __________
Prep. By: __________
Date: __________

I/O #1156

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: Mining Claim Overlay

OUTPUT FORM: Graphic

OUTPUT DESCRIPTION: Overlay to Base Map showing Mineral patents and mining claims subject to special mining laws.

USER(s): Mineral Specialist, Economist

LOCATION(s): Area, District, State Offices

USAGE: URA, Special Projects, mineral evaluation, environmental statements

ACCESS LIMITATIONS: None

RESPONSE TIMES: DESIRED: Overnight REQUIRED: 1 week

FREQUENCY OF PRODUCTION: Per Planning Unit: 1 per month .

DEPENDENCIES: URA, environmental statements, withdrawal actions, other land-use activities

REQUEST PARAMETERS: By Planning Unit, District. Unpatented claims might be shown alone by querying code, case type (0121-2912).

I/O #1156

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: Mining Claim Overlay

SORT ORDER: NA

ESTIMATED VOLUME: Depends on density of occurrences. May vary from 1 to 100.

COMPUTATIONS/PROCESSES: None

ACCURACY: Hardcopy must conform with appropriate Base Map.

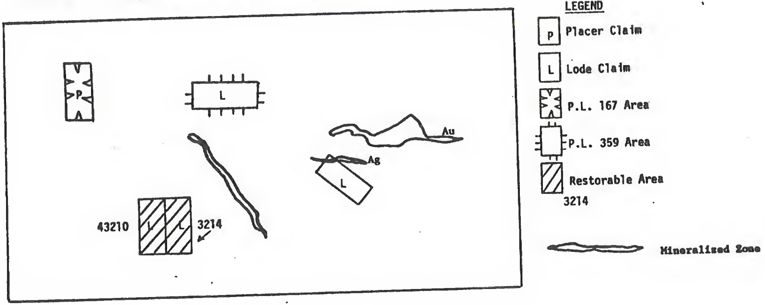
SCALE: Dependent on density of the data. Larger scales may be necessary to display complex data.

ANNOTATIONS: Use standard annotations developed by Land-Survey.

LEGEND: Meaning of symbols upon request.

REMARKS: This overlay will show mining claims; both lode and placer; tunnel and mill sites; as well as PL-167 and PL-359 areas. This overlay may be requested by township/range and certain other areal parameters. This may be combined with mining facilities overlay if volume warrants.

I/O #1156 Mining Claim Overlay West Fork Planning Unit



I/O #1156 MINING CLAIM OVERLAY

Claim Serial Number	0121 - 2554
Claim Location	0121 - 2557
Claim Type	Land records
P.L. 167 Boundary	0121 - 2841
P.L. 359 Boundary	0121 - 2841
Boundary, Mineralized Zone	0111 - 2392
State Administrative	0100 - 0004
District	0100 - 0543
Planning Unit	0100 - 1075
REsource Area	0100 - 0418
Boundary, Other Mineral Encumberance	0100 - 2426

Prog. Area: ____________
Prep. By: ____________
Date: ____________

I/O #1157

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: Mineral Ownership Overlay

OUTPUT FORM: Graphic

OUTPUT DESCRIPTION: Overlay to Base Map showing distribution and ownership of Federally owned minerals.

USER(s): Mineral Specialist, Economist

LOCATION(s): Area, District, State Office

USAGE: URA, Environmental statements, special projects

ACCESS LIMITATIONS: None

RESPONSE TIMES: DESIRED: Overnight REQUIRED: 1 week

FREQUENCY OF PRODUCTION: Per planning unit, 1-2 per year.

DEPENDENCIES: URA, Environmental Statements, special projects

REQUEST PARAMETERS: By planning unit, District or other areal parameters.

I/O #1157

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: Mineral Ownership Overlay

SORT ORDER: N/A

ESTIMATED VOLUME: Dependent on scale; may vary from 1 to 5.

COMPUTATIONS/PROCESSES: None

ACCURACY: Overlay must coincide with appropriate base map.

SCALE: Dependent on density of data. Complex areas will require larger scale maps.

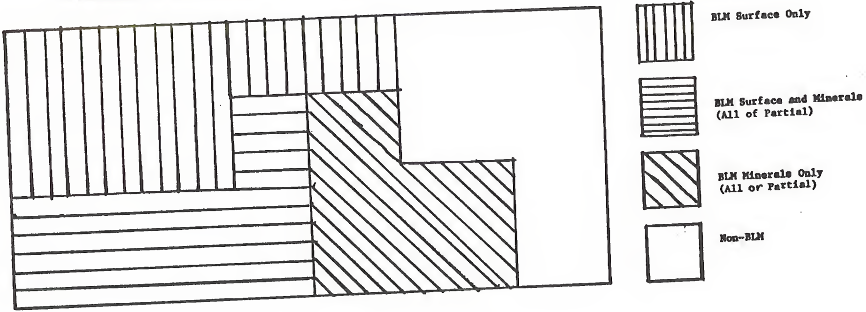
ANNOTATIONS: See attached sample - use standard USGS symbols where appropriate.

LEGEND: Meaning of symbols upon request.

REMARKS: This output will be provided from the lands data base.

FEDERAL MINERALS OVERLAY WEST FORK PLANNING UNIT

I/O #1157


LEGEND
BLM Surface Only
BLM Surface and Minerals (All of Partial)
BLM Minerals Only (All or Partial)
Non-BLM

I/O #1157 FEDERAL MINERALS OVERLAY

State, Administration	0100 - 0004
District	0100 - 0543
Resource Area	0100 - 0418
Planning Unit	0100 - 1075
Boundary, Ownership	Graphic - 0121
Lands, Ownership	0121 - 2531
Minerals Ownership, Reserved	0121 - 2532
Minerals Ownership, Acquired	0121 - 2533
Minerals Ownership, Miscellaneous	0121 - 2534
Minerals Ownership, Recent	0121 - 2535

Prog. Area: __________
Prep. By: __________
Date: __________

I/O # 1158

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: Mineral Material Site Overlay

OUTPUT FORM: Graphic

OUTPUT DESCRIPTION: Overlay to Base Map showing occurrences of Mineral Material Disposal Sites.

USER(s): Mineral Specialist

LOCATION(s): Area, District, State Offices

USAGE: URA, Environmental Statements, Special Projects

ACCESS LIMITATIONS: None

RESPONSE TIMES: DESIRED: Overnight REQUIRED: 1 week

FREQUENCY OF PRODUCTION: Per Planning Unit: 1-2 per year.

DEPENDENCIES: URA, Environmental Statements, Special Projects

REQUEST PARAMETERS: Planning Unit, District, other areal parameters.

I/O # 1158

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: Mineral Material Site Overlay

SORT ORDER: NA

ESTIMATED VOLUME: Dependent on scale, varying from 1 to 5.

COMPUTATIONS/PROCESSES: None

ACCURACY: Overlay must conform to Base Map.

SCALE: Dependent on density of data. Concentrations of sites will require larger scale.

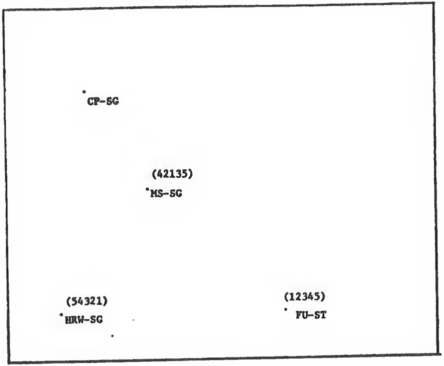
ANNOTATIONS: See attached sample. Use standard USGS codes where appropriate. Symbols based on Holding, Mineral, Type, Commodity, Mineral

LEGEND: Meaning of symbols or annotations upon request.

REMARKS: Data taken from the mine record to produce this overlay.

I/O #1158

MINERAL MATERIAL SITE OVERLAY WEST FORK PLANNING UNIT



LEGEND

(Serial Number of Case)
•AAA-BB

Where For:

AAA- CP=Community Pit
CU=Common-Use Area
MS=Material Sale
FU=Free-Use Area
HRW=Highway R/W

BB- SG=Sand and Gravel
ST=Stone
PU=Pumice
SH=Shale
CL=Clinker
CY=Clay
Etc.

I/O # 1158

MINERALS MATERIALS OVERLAY

State, Administrative	0100 - 0004
District	0100 - 0543
Resource Area	0100 - 0418
Planning Unit	0100 - 1075
Serial Number, Lands Records Case Mgmt.	0121 - 2554
Location, Mine	0111 - 2371
Commodity, Mineral	0100 - 2303
Holding, Mineral Type	0111 - 2317

Prog. Area: ____________
Prep. By: ____________
Date: ____________

I/O #1159

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: Identified Resource Classes

OUTPUT FORM: Graphic

OUTPUT DESCRIPTION: Overlay to Base Map showing mineral occurrences with designated economic classification.

USER(s): Mineral Specialist; Economist

LOCATION(s): Area, District, State Offices

USAGE: URA, Environmental Statements, Special Projects

ACCESS LIMITATIONS: Identified reserve information, by company, will not be available to the public.

RESPONSE TIMES: DESIRED: Overnight REQUIRED: 1 week

FREQUENCY OF PRODUCTION: 1 to 2 per year per District.

DEPENDENCIES: URA, Environmental Statements, Special Projects

REQUEST PARAMETERS: Planning Unit, District, Resource Class

I/O #1159

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: Identified Resource Classes

SORT ORDER: NA

ESTIMATED VOLUME: Dependent on scale and complexity of data.

COMPUTATIONS/PROCESSES: Model required to classify reserves into economic and subeconomic classes. See Economic Ranking of Reserves tabular output.

ACCURACY: Overlay must conform with Base Map.

SCALE: Determined by quantity of data displayed.

ANNOTATIONS: See attached sample. Use standard USGS codes where applicable.

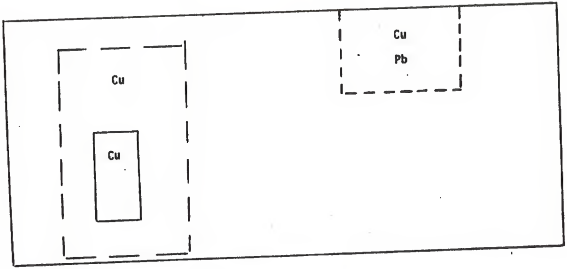
LEGEND: Display meaning of symbols and codes upon request.

REMARKS:

I/O #1159

RESOURCE CLASS OVERLAY

WEST FORK PLANNING UNIT



LEGEND

Cu — Area of Economic Reserves - Copper

Cu — Area of Subeconomic Resources - Copper

Pu Cu — Area of possible undiscovered resources - copper and lead

I/O #1159

IDENTIFIED RESOURCE CLASSES

State, Administrative	0100 - 0004
District	0100 - 0543
Resource Area	0100 - 0418
Planning Unit	0100 - 1075
Boundary, Deposit	0111 - 2364
Commodity, Mineral	0100 - 2303
Exploitation, Economic Feasibility	0111 - 2476
Disposal, Category, Mineral	0111 - 2477

Prog. Area: ____________
Prep. By: ____________
Date: ____________

I/O #1160

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: Mineral Status Table

OUTPUT FORM: Table

OUTPUT DESCRIPTION: Table showing the particulars about the commodities located in the area.

USER(s): Mineral specialist LOCATION(s): Area, District, State

USAGE: URA primarily; special projects, mineral evaluations

ACCESS LIMITATIONS: Proprietary data about reserves must be protected.

RESPONSE TIMES: DESIRED: Overnight REQUIRED: two days

FREQUENCY OF PRODUCTION: Per planning unit: 1 - 2 per year, hardcopy

DEPENDENCIES: URA, Special Requests, Environmental statements

REQUEST PARAMETERS: Planning unit or other areal parameters. Might be requested after display of the data graphically.

I/O #1160

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: Mineral Status Table

SORT ORDER: Location

ESTIMATED VOLUME: 1 to 100 pages depending on size of area and density of mineral occurrences.

COMPUTATIONS/PROCESSES: Summing of quantity data by category within each township may be required.

ACCURACY: Round reliability categories to nearest thousand units.

SCALE: N/A

ANNOTATIONS: N/A

LEGEND: N/A

REMARKS: This report may be requested by itself or to augment a graphic of an area.

Any State
Any Identified Area

I/O #1160

RESOURCES AND RESERVES OF BITUMINOUS COAL BY OWNER/OPERATOR, LOCATION, TYPE HOLDING, AND RELIABILITY CATEGORY

Owner/Operator	Location	Type Holding	Serial #	Issue Date	Number Acres	Thousand Tons			
						Measure	Indicated	Inferred	Total
John Doe	Sec. 1, 2, T7NR11W	Comp. Lease	123456	6-6-81	321	X	XX	XXX	XXXXXX
Bill Buck	Sec. 8, T9N	Lease Application	321654	8-7-85	400		XX	XXX	XXXXX
P. Prairie	Sec. 1 T11NR11W	License	8088	2-13-46	48	X			X

I/O #1160

MINERAL STATUS TABLES

State, Administrative	0100 - 0004
District	0100 - 0543
Resource Area	0100 - 0418
Planning Unit	0100 - 1075
Commodity, Mineral	0100 - 2303
Name, Owner	0111 - 2288
Location	
Township	0100 - 1695
Range	0100 - 1699
Section	0100 - 2501
Holding Mineral Type	0111 - 2317
Serial Number, Case Management	0121 - 2554
Date Issued	0100 - 1905
Acres, Date Unit	0100 - 6520
Resource, Reliability Category	0111 - 2471
Quantity, Mineral Resource	0111 - 2417
Unit, Resource Quantity	0111 - 2459
Total, Reserve	Calculated

Prog. Area: 0111
Prep. By: HFY
Date: 7-7-77

I/O #1161

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: Known Leasable Area Overlay

OUTPUT FORM: Graphic

OUTPUT DESCRIPTION: Display of annotated areas identified as Known for Mineral Leasing.

USER(s): Mineral Specialist; Economist

LOCATION(s): Area, District, State Offices

USAGE: URA, Environmental Statements, Special Projects

ACCESS LIMITATIONS: None

RESPONSE TIMES: DESIRED: Overnight REQUIRED: 1 week

FREQUENCY OF PRODUCTION: Per Planning Unit: 1-2 per year.

DEPENDENCIES: URA, Environmental Statements, Special Projects

REQUEST PARAMETERS: URA, District and other areal parameters, as well as Type, Leasable Area

I/O #1161

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: Known Leasable Area Overlay

SORT ORDER: NA

ESTIMATED VOLUME: Dependent on map scale and density of occurrence.

COMPUTATIONS/PROCESSES: None

ACCURACY: Overlay must conform with Base Map.

SCALE: Determined by density of data displayed.

ANNOTATIONS: Use standard BLM symbols developed by Lands.

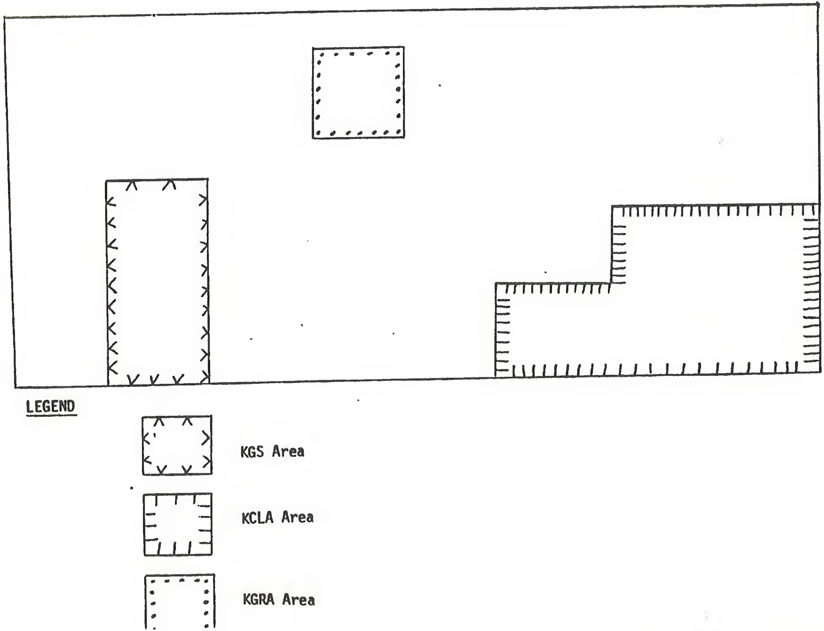
LEGEND: Meaning of annotations/symbols upon request.

REMARKS:

I/O #1161

KNOWN LEASEABLE AREA OVERLAY

WEST FORK PLANNING UNIT



I/O #1161 KNOWN LEASABLE AREA OVERLAY

State, Administrative	0100 - 0004
District	0100 - 0543
Planning Unit	0100 - 1075
Leasable Area Boundary	0111 - 2383
Type, Leasable Area	0111 - 2293

Prog. Area: 0111
Prep. By: HFY
Date: 7-8-77

I/O #1162

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: Mineral Holding Overlay

OUTPUT FORM: Graphic

OUTPUT DESCRIPTION: Overlay to Base Map displaying mineral holding by type.

USER(s): Minerals Staff, Economist LOCATION(s): Area, District, State Offices

USAGE: URA Environmental Statements, Special Projects

ACCESS LIMITATIONS: None

RESPONSE TIMES: DESIRED: Overnight REQUIRED: 1 week

FREQUENCY OF PRODUCTION: Per Planning Unit; 4-5 per year.

DEPENDENCIES: URA, Environmental Statements, Special Projects

REQUEST PARAMETERS: Planning Unit, District or other areal parameters, as well as Type Mineral Holding.

I/O #1162 OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: Mineral Holding Overlay

SORT ORDER: NA

ESTIMATED VOLUME: Determined by density of occurrences and scale.

COMPUTATIONS/PROCESSES: None

ACCURACY: Overlay must conform to Base Map.

SCALE: Dependent on density.

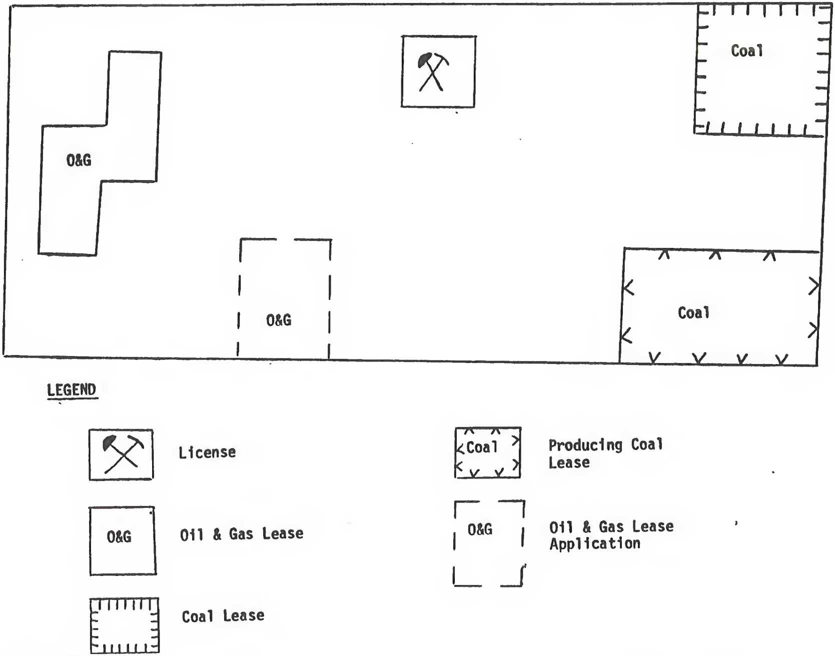
ANNOTATIONS: Use standard BLM symbols.

LEGEND: Meaning of symbols upon request.

REMARKS:

I/O #1162

MINERAL HOLDING OVERLAY
WEST FORK PLANNING UNIT



I/O #1162 MINERAL HOLDING OVERLAY

State, Administrative	0100 - 0004
District	0100 - 0543
Resource Area	0100 - 0418
Planning Unit	0100 - 1075
Boundary, Lease, License or Permit	Graphic-Land Records
Land-Mineral Use, Less than Fee	0121 - 2552
Land-Mineral Use, Use Purpose	0121 - 2553
Land-Mineral Use - Status	0134 - 3818
Boundary, Other Mineral Encumbrance	0111 - 2426

Prog. Area: 0111
Prep. By: HFY
Date: 8 July 77

I/O #1163

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: Mineral Production and Receipts

OUTPUT FORM: Table

OUTPUT DESCRIPTION: Tabulation of production and receipts by mineral commodity by year.

USER(s): Minerals Staff; Economist LOCATION(s): Area, District, State Offices

USAGE: URA, Environmental statements, Special Projects

ACCESS LIMITATIONS: Production or receipts that may reveal confidential information will not be available to the public.

RESPONSE TIMES: DESIRED: Overnight REQUIRED: 3 days

FREQUENCY OF PRODUCTION: Per planning unit; annually.

DEPENDENCIES: URA, Environmental statements, special projects

REQUEST PARAMETERS: Planning Unit, District and other areal parameters.

I/O #1163

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: Mineral Production and Receipts

SORT ORDER: Planning Unit, Commodity

ESTIMATED VOLUME: 1 to 10 pages

COMPUTATIONS/PROCESSES: Total the production from individual properties, by commodity to produce an annual sum. Calculate percentage that Federal production is of total production: Federal ÷ Total = Percent Federal

ACCURACY: Tonnages and values except receipts may be rounded to nearest one thousand. Receipts are shown to the nearest cent.

SCALE: N/A

ANNOTATIONS: N/A

LEGEND: N/A

REMARKS: Data from the active file must be combined with archived data to produce this report.

Mineral Production and Receipts Type of Holding and Commodity

I/O #1163

Name of Pro.	Type Holding	Commodity	Production (000)	Value, Total (000)	Percent Federal	Federal Acreage in Production	Federal Receipts (000)	Type of Receipt
J. Smith	Lease	Potassium	805	8059	33	6820	1700	Royalty
Totals	Lease	Potassium	13,046	100,349	—	104,690	23,467	

I/O #1163 PRODUCTION AND RECEIPTS TABLE

State, Administrative	0100 - 0004
District	0100 - 0543
Resource Area	0100 - 0418
Planning Area	0100 - 1075
Name, Owner/Operator	0111 - 2288
Commodity, Mineral	0111 - 2303
Amount of Annual Production	0111 - 2460
Unit of Measure - Production	0111 - 2462
Value of Annual Production	0111 - 2461
Percent Federal Mineral Ownership	0111 -2325
Acreage, Mineral Production	0111 - 2469
Type of Mineral Receipt	0111 - 2471

Prog. Area: 0111
Prep. By: HFY
Date: 12-July 77

I/O #1164

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: Analysis of Mineral Commodity by Occurrence

OUTPUT FORM: Tabular

OUTPUT DESCRIPTION: Display of chemical and physical properties of mineral occurrences.

USER(s): Minerals Staff; Economist LOCATION(s): Area, District, State Office

USAGE: Minerals Inventory, URA, Special Projects

ACCESS LIMITATIONS: None

RESPONSE TIMES: DESIRED: Overnight REQUIRED: 1 week

FREQUENCY OF PRODUCTION: Per district or resource area - 1 to 2 per year.

DEPENDENCIES: Minerals inventory, special projects, resource appraisal

REQUEST PARAMETERS: District, Planning Unit or other areal parameters, and commodity.

I/O #1164

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: Analysis of Mineral Commodity by Occurrence

SORT ORDER: Location; Name, Mineral Occurrence

ESTIMATED VOLUME: 5-10 pages

COMPUTATIONS/PROCESSES: The values of the characteristics must be averaged if there are more than one sample for a given occurrence.

ACCURACY: N/A

SCALE: N/A

ANNOTATIONS: N/A

LEGEND: N/A

REMARKS: The output would show appropriate properties for any given commodity.

I/O #1164

Any State
Any Identified Area

AVERAGE ANALYSIS OF BITUMINOUS COAL

District	Avg. Thick Inches	Moisture A. R.	Ash A.R.	Ash Dry	Sulfur A.R.	Sulfur Dry	Sulfur M. & AF	Btu A. R.	Btu Dry	Btu M & AF	Number Analysis
Planning Unit #1											
Coalbed: Blue	66	5.1	11.0	11.6	2.0	2.2	2.4	12920	13610	15400	1
Red	43	7.5	12.6	13.7	1.9	2.1	2.4	11430	12360	14320	3
Planning Unit #2											
Coalbed: Red	27	—	—	—	—	—	—	—	—	—	56
Green	133	6.7	11.8	12.1	2.3	2.6	2.9	12440	12870	13220	

I/O #1164 MINERAL COMMODITY ANALYSIS

State, Administration	0100 - 0004
District	0100 - 0543
Resource Area	0100 - 0418
Planning Unit	0100 - 1075
Name, Mineral Property	0111 - 2308
Thickness, Average Mineral	0111 - 2403
Constituent Code	0111 - 2391
Amount, Constituent	0111 - 2390
Name, Constituent	0111 - 2385
Unit of Measure, Constituent	0111 - 2389
Number of Analyses	Computed

Prog. Area: 0111
Prep. By: HFY
Date: 7-11-77

I/O #1165

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: Economic Reserves Overlay

OUTPUT FORM: Graphic

OUTPUT DESCRIPTION: Overlay showing mineral occurrences that are considered economically recoverable.

USER(s): Minerals Staff
Economists

LOCATION(s): Area, District, State Offices

USAGE: URA, Environmental Statements, Special Projects

ACCESS LIMITATIONS: None, provided proprietary data are not disclosed.

RESPONSE TIMES: DESIRED: Overnight REQUIRED: 1 week

FREQUENCY OF PRODUCTION: 1 to 2 per year per District.

DEPENDENCIES: URA, Environmental Statements, Special Projects

REQUEST PARAMETERS: Planning Unit, District

I/O #1165

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: Economic Reserves Overlay

SORT ORDER: None

ESTIMATED VOLUME: Dependent on map scale and density of display.

COMPUTATIONS/PROCESSES: Economic reserves implies a cost analysis determination based on mineral types, mining conditions, beneficiation and market analysis.

ACCURACY: Overlay must conform to Base Map.

SCALE: Dependent on complexities and density of data.

ANNOTATIONS: See attached sample - Use Standard USGS Codes where applicable.

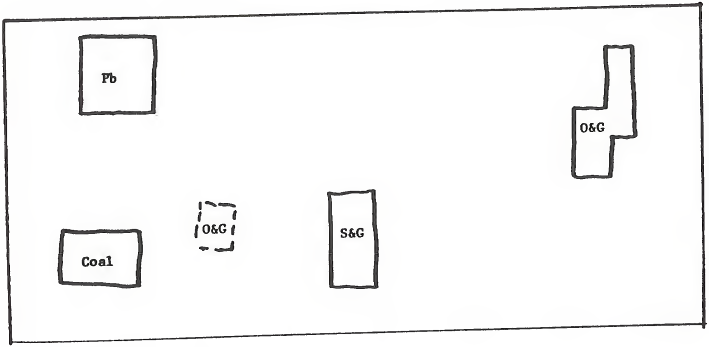
LEGEND: Table of commodities and associated codes upon request.

REMARKS: Both Economic and submarginal reserves shown on this overlay.

I/O #1165

ECONOMIC RESERVES OVERLAY

WEST FORK PLANNING UNIT



LEGEND

ECONOMIC RESERVES

☐ Economic reserve with commodity

⬚ Submarginal with Commodity

I/O #1165

Economic Reserves Overlay

State Admin	0100 0004
District	0100 0534
Planning Unit	0100 1075
Boundary, Deposit	0111 2364
Commodity, Mineral	0100 2303
Exploitation, Economic Feasibility	0111 2476
Disposal, Category, Mineral	0111 2477
Type of Claim	Land Records

Prog. Area: 0111
Prep. By: HFY
Date: 7-11-77

I/O # 1166

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: Display of Paramarginal Mineral Resources

OUTPUT FORM: Graphic

OUTPUT DESCRIPTION: Overlay display of paramarginal resources showing commodity and reason for being paramarginal.

USER(s): Minerals Staff

LOCATION(s): Area, District, State Offices

USAGE: URA, Environmental Statements, Special Projects

ACCESS LIMITATIONS: None

RESPONSE TIMES: DESIRED: Overnight REQUIRED: 1 week

FREQUENCY OF PRODUCTION: Per Planning Unit; 1 to 2 per year.

DEPENDENCIES: URA, Environmental Statements, Special Projects

REQUEST PARAMETERS: URA, District and other areal parameters

I/O # 1166

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: Display of Paramarginal Mineral Resources

SORT ORDER: NA

ESTIMATED VOLUME: Dependent on density and map scale.

COMPUTATIONS/PROCESSES: None

ACCURACY: Overlay must conform with Base Map.

SCALE: Dependent on entity density.

ANNOTATIONS: Use BLM standards.

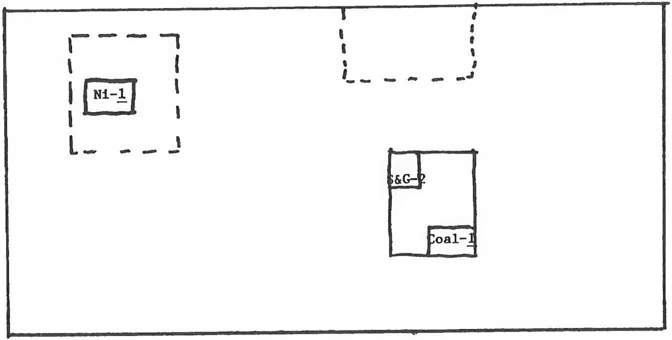
LEGEND: Meaning of symbols upon request.

REMARKS: The withdrawal areas from lands records systems will be overlayed on an overlay of those mineral occurrences that are paramarginal.

I/O # 1166

PARAMARGINAL RESOURCES OVERLAY

WEST FORK PLANNING UNIT



LEGEND

⬚ National Park

☐ Urban Area

Commodity	-Reason for being Paramarginal
Ni-1	Nickel-Paramarginal because of location
S & G-2	Sand and Gravel-Paramarginal because of chemical Constituents.

I/O # 1166

PARAMARGINAL RESOURCES OVERLAY

State, Administrative	0100 - 0004
District	0100 - 0543
Resource Area	0100 - 0418
Planning Unit	0100 - 1075
Boundary Deposit	0111 - 2364
Code Case Type (for P.L. 167 and 359 areas)	0121 - 2912
City, Boundary	0171 - 7510
Commodity, Mineral	0100 - 2303
Exploitation, Economic Feasibility	0111 - 2476
Disposal, Category, Mineral	0111 - 2477

Prog. Area: 0111
Prep. By: HFY
Date: 7-11-77

OUTPUT DESCRIPTION
Page 1 of 2

I/O #1167

OUTPUT TITLE: Undiscovered Resources Overlay

OUTPUT FORM: Graphic

OUTPUT DESCRIPTION: Overlay of Potential Mineral Areas

USER(s): Mineral Specialist, Economist

LOCATION(s): Area, District, State Offices

USAGE: URA, Environmental Statements, Special Projects, (withdrawal proposals)

ACCESS LIMITATIONS: None

RESPONSE TIMES: DESIRED: Overnight REQUIRED: 1 week

FREQUENCY OF PRODUCTION: Per Planning Unit: 1-2 per year.

DEPENDENCIES: URA, Environmental Statements, Special Projects

REQUEST PARAMETERS: Planning Unit, District

OUTPUT DESCRIPTION
Page 2 of 2

I/O #1167

OUTPUT TITLE: Undiscovered Resources Overlay

SORT ORDER: None

ESTIMATED VOLUME: Depends on map scale and complexity.

COMPUTATIONS/PROCESSES: None

ACCURACY: Overlay must conform with Base Map.

SCALE: Dependent on density of data.

ANNOTATIONS: Use standard BLM symbols.

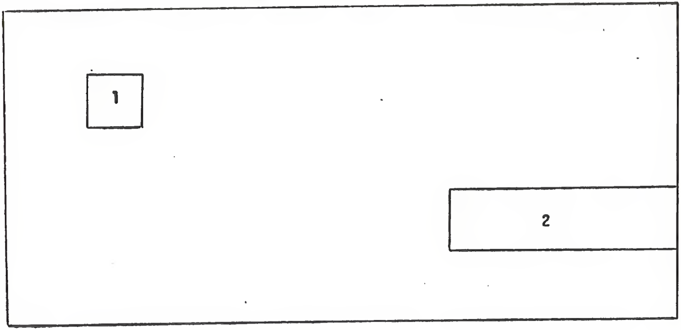
LEGEND: Meaning of symbols upon request.

REMARKS:

UNDISCOVERED RESOURCES

I/O #1167

WEST FORK PLANNING UNIT



LEGEND

1	Area of Potential Locatable Minerals (Hypothetical)
2	Area of Potential Leasable Minerals (Speculative)

I/O #1167

UNDISCOVERED RESOURCE OVERLAY

State, Administrative	0100 - 0004
District	0100 - 0543
Planning Unit	0100 - 1075
Boundary, Deposit	0111 - 2364
Commodity	0100 - 2303
Exploitation, Economic Feasability	0111 - 2476
Disposal, Category Mineral	0111 - 2477

Prog. Area: 0111
Prep. By: HEY
Date: 7-11-77

OUTPUT DESCRIPTION
Page 1 of 2

I/O #1168

OUTPUT TITLE: Economic Ranking of Reserves

OUTPUT FORM: Tabular

OUTPUT DESCRIPTION: Table of mineral deposits by location, commodity, and value.

USER(s): Minerals Staff
Economist

LOCATION(s): Area, District, State

USAGE: URA, Environmental Statements, Special Projects

ACCESS LIMITATIONS: Cannot be revealed if confidential data are involved.

RESPONSE TIMES: DESIRED: Overnight REQUIRED: 1 week

FREQUENCY OF PRODUCTION: Per Planning Unit: 1-2 per year.

DEPENDENCIES: URA, Environmental Statements, Special Projects, Resource Evaluation

REQUEST PARAMETERS: Planning Unit, District and other areal parameters or commodity.

OUTPUT DESCRIPTION
Page 2 of 2

I/O #1168

OUTPUT TITLE: Economic Ranking of Reserves

SORT ORDER: Economic Rank in descending order.

ESTIMATED VOLUME: Dependent on the character of the area.

COMPUTATIONS/PROCESSES: Identify the reserves in proper units, selling price and value of a property; rank in sequence of decreasing value. This will require the development of a modeling system that will determine a rank from manipulation of the identified parameters.

ACCURACY: N/A

SCALE: N/A

ANNOTATIONS: N/A

LEGEND: N/A

REMARKS: An attempt will be made to acquire Bu Mines "MINSIM" routine to modify for BLM's use. See attached flow chart for a description of the technique. Using current prices determine whether reserve is economically recoverable. Those that are not are determined to be submarginal.

I/O #1168

ECONOMIC RESERVES RANKED BY VALUE, 1977,

WEST FORK PLANNING UNIT

DEPOSIT NAME	COMMODITY	LOCATION	PUBLIC LAND SURVEY	UNIT VALUE	TOTAL VALUE (MILLION)
Mona #1	Tungsten	46°N110°W	Sec 31T17N R118	1.35	150.00
Ajax	Trona	37°N99°W	Sec 31, 32, T16N R111W	0.75	75.00
Faraway	Stone	43°N110°W	Sec 18.T21N R89W	0.50	0.15

I/O #1168 TABLES OF ECONOMIC RESERVES

State Admin	0100 0004
District	0100 0534
Planning Unit	0100 1075
Name, Mineral Property	0111 2308
Latitude	0111 1236
Longitude	0111 1237
Commodity, Mineral	0100 2303
Township	0100 1695
Range	0100 1699
Section	0100 2501
Exploitation, Economic Feasibility	0111 2476
Amount, Mineral	0111 2283
Unit Value, Mineral (Input from a table)	
Total Value, Mineral (Generated)	

I/O #1168

For each mineral occurrence of estimated tonnages, grades, and reliability category, determine selling price on an assumed rate of return, estimated capital and operating costs for mining, concentrating, smelting and refining. Freight costs to transport material to the smelters and refineries must be considered in the cost analysis.

Capital investment costs include mobile and stationary equipment, construction, engineering, facilities and utilities, and working capital. Working capital is a revolving cash fund required for labor, supplies, taxes and insurance. Total operating costs include direct, indirect and fixed costs. Direct costs include materials, utilities, direct and maintenance labor, and payroll overhead. Indirect costs include technical and clerical labor, administrative costs, facilities maintenance and supplies and research. Fixed charges include taxes, insurance, depreciation and deferred expenses.

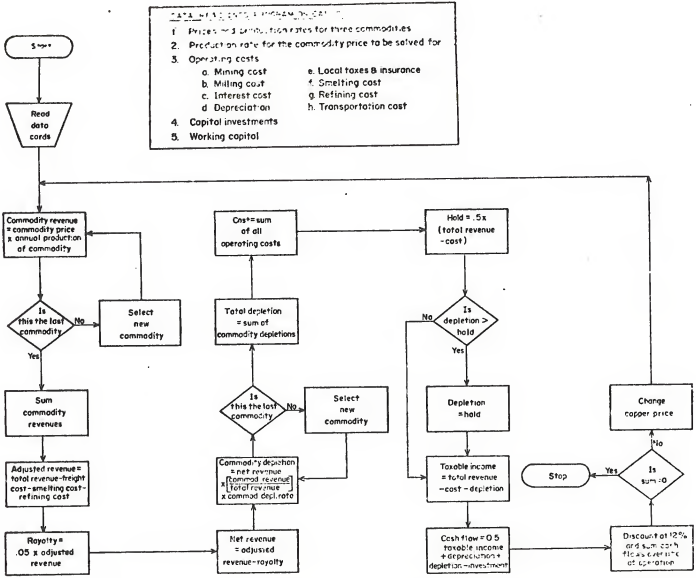

DATA READ INTO PROGRAM ON CARDS
1. Prices and production rates for three commodities
2. Production rate for the commodity price to be solved for
3. Operating costs
a. Mining cost
b. Milling cost
c. Interest cost
d Depreciation
e. Local taxes & insurance
f. Smelting cost
g. Refining cost
h. Transportation cost
4. Capital investments
5. Working capital
Start
Read data cards
Commodity revenue = commodity price x annual production of commodity
Is this the last commodity
No
Select new commodity
Yes
Sum commodity revenues
Adjusted revenue = total revenue-freight cost-smelting cost-refining cost
Royalty = .05 x adjusted revenue
Net revenue = adjusted revenue-royalty
Commodity depletion = net revenue x [commod revenue / total revenue] x commod depl. rate
Is this the last commodity
No
Select new commodity
Total depletion = sum of commodity depletions
Cost = sum of all operating costs
Hold = .5x (total revenue - cost)
Is depletion > hold
No
Yes
Depletion = hold
Taxable income = total revenue - cost - depletion
Cash flow = 0.5 taxable income + depreciation + depletion - investment
Discount at 12% and sum cash flows over life of operation
Is sum = 0
Yes
Stop
No
Change copper price

FIGURE 8. - Flow chart of the financial evaluation procedure as programed for computer usage.

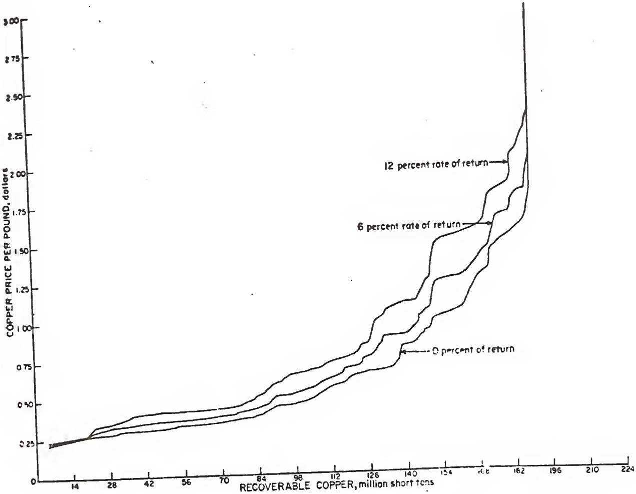


FIGURE 9. - Total domestic recoverable copper resources, price calculated using various rates of return.

Figure 9 indicates the amount of copper that is economically producible at 0-, 6-, and 12-percent discounted-cash-flow rates of return on the investment required to develop and produce a marketable product. Generally, a 12-percent return or larger is required to provide the incentive to develop a mineral deposit because of the risk involved.

At 12-percent rate of return an estimated 83 million tons of copper could be economically recovered at a copper price of $0.50. If a 0- or 6-percent rate of return were accepted the tonnage of recoverable copper would increase to 106 and 92 million tons, respectively. These estimates are based on the inclusion of byproduct revenues.

Prog. Area: 0111
Prep. By: HFY
Date: 7-11-77

I/O # 1169

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: Ranking of Paramarginal Resources

OUTPUT FORM: Tabular

OUTPUT DESCRIPTION: Table of Paramarginal Resources by Commodity, location and value.

USER(s): Minerals Staff, Economist LOCATION(s): Area, District State Offices

USAGE: URA, Environmental Statements, Special Projects

ACCESS LIMITATIONS: None

RESPONSE TIMES: DESIRED: Overnight REQUIRED: 1 Week

FREQUENCY OF PRODUCTION: Per Planning Unit: 1-2 per year.

DEPENDENCIES: URA, Environmental Statements, Special Projects

REQUEST PARAMETERS: Planning Unit, District and other area parameters. Commodity-maybe.

OUTPUT DESCRIPTION
Page 2 of 2

I/O # 1169

OUTPUT TITLE: Ranking of Paramarginal Resources

SORT ORDER: Location

ESTIMATED VOLUME: Dependent on mineral characteristics of an area

COMPUTATIONS/PROCESSES: Identify mineral occurrences in withdrawn areas or minerals with socially unacceptable traits of chemical or physical properties that would preclude use.

ACCURACY: NA

SCALE: NA

ANNOTATIONS: NA

LEGEND: NA

REMARKS: This output is used in conjunction with the graphic display "Identify Paramarginal Resources" and requires the same data input.

I/O # 1169

PARAMARGINAL RESOURCES RANKED BY

VALUE, 1977

DEPOSIT	COMMODITY	LOCATION	PUBLIC LAND SURVEY	UNIT VALUE	TOTAL VALUE (MILLION)	TYPE OF HINDRANCE
Sierra	Gold	49°N 89°W	Sec. 3.T7N	134.15	134.50	Location
Gotcha	Gold	46°N 87°W	Sec. 17. T8N R28W	134.15	67.08	Location

I/O # 1169

TABLE OF PARAMARGINAL RESOURCES

State Admin	0100 0004
District	0100 0534
Planning Unit	0100 1075
Name, Mineral Property	0111 2308
Commodity, Mineral	0111 2303
Longitude	0100 1237
Latitude	0100 1236
Township	0100 1695
Range	0100 1699
Section	0100 2501
Price, Unit Selling	0111 2279
Total Value	Computed
Type of Hindrance	0111 2415

Prog. Area: 0111
Prep. By: HFY
Date: 7-7-77

I/O # 1170

OUTPUT DESCRIPTION
Page 1 of 2

OUTPUT TITLE: Narrative Description of Planning Unit

OUTPUT FORM: CRT Text or Hardcopy

OUTPUT DESCRIPTION: URA textual data not contained in Minerals data base but the results of manipulation and synthesis of data contained therein.

USER(s): Mineral Specialist, Economist, Management

LOCATION(s): Areas, Districts, State Offices

USAGE: Identified part of the URA

ACCESS LIMITATIONS: None

RESPONSE TIMES: DESIRED: Overnight REQUIRED: Three days

FREQUENCY OF PRODUCTION: Per planning unit: 1 per year

DEPENDENCIES: Original and updates of URA manuscripts and similar reports

REQUEST PARAMETERS: Planning Unit, District

I/O # 1170

OUTPUT DESCRIPTION
Page 2 of 2

OUTPUT TITLE: Narrative Description of Planning Unit

SORT ORDER: NA

ESTIMATED VOLUME: 5 to 10 pages

COMPUTATIONS/PROCESSES: None

ACCURACY: NA

SCALE: NA

ANNOTATIONS: NA

LEGEND: NA

REMARKS: The narrative will be the result of a text editing process that will be maintained in a separate text editing file. It may be requested, scanned and updated as necessary outside the Data Base System.

Prog. Area:
Prep. By:
Date:

I/O # 1101

DATA SOURCE DESCRIPTION
(DATA BASE MAINTENANCE)

TITLE/DESIGNATION: Mining Claim Lease and Facility Overlay

FORM: Annotated Base Map

PREPARATION RESPONSIBILITY: Minerals Staff at District

FORMAT: Base Map showing mines, mill sites, tunnel sites and mineral activities on state and private lands. Mineral holding data resultant from Land records activity will be provided by Lands.

DATA ENTRY PROCEDURE: Annotate Map with standard symbols as determined by USGS and BLM 3030 manual.

FREQUENCY OF UPDATE: 1-6 months/District

VOLUME OF UPDATE: 1-5 new sites per district

ARCHIVING REQUIREMENTS: None

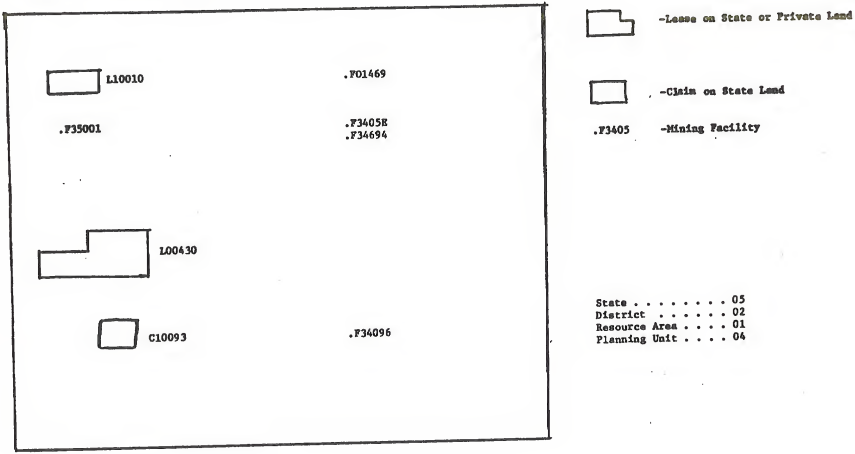
ACCESS LIMITATIONS: Update by Minerals Staff only

SPECIAL EDIT/AUDIT/VALIDATION REQUIREMENTS: None

REMARKS: This will complete the input requirements for production of the mining claim overlay which is based on land records data. The need to show claims will diminish as the Mining Claim Recordation Act is implemented. Some facilities requiring graphic location will not have a data record in the data lease. Point locations will be shown with appropriate symbol on Output (see Mine Facilities Overlay).

Mining Claim, Lease and Facility-Overlay

I/O # 1101



State 05
District 02
Resource Area 01
Planning Unit 04

I/O # 1101

MINING CLAIM LEASE AND FACILITY OVERLAY

State, Admin	0100 0004
District	0100 0534
Resource Area	0100 0418
Planning Unit	0100 1075
Location, Mineral Facility	0111 2371
Identification, Mine	0111 2395
Boundary, Other Mineral Encumbrance	0111 2426

Proc. Area:__________
Prep. By:__________
Date:__________

I/O # 1102

DATA SOURCE DESCRIPTION
(DATA BASE MAINTENANCE)

TITLE/DESIGNATION: Deposit Data

FORM: Coding Sheet for BLM, Mag Tape from Bu Mines and USGS.

PREPARATION RESPONSIBILITY: Minerals Staff in the District for BLM Lands. Bu Mines MAS, FAS Systems and USGS CRIB System

FORMAT: Input Forms to be developed based on Data Base Format. Elements listed on attached sheet.

DATA ENTRY PROCEDURE: To be determined.

FREQUENCY OF UPDATE: One update every 6 months per District.

VOLUME OF UPDATE: 1 to 3 new deposits per District.

ARCHIVING REQUIREMENTS: None - all records to remain in the active file.

ACCESS LIMITATIONS: Update by minerals staff only for BLM records. Automated update by Mines and USGS for other agency records and/or data elements.

SPECIAL EDIT/AUDIT/VALIDATION REQUIREMENTS: Access to any cost or reserves data should be restricted.

REMARKS: This is the major input sheet for deposit data. The identifier for a deposit will be Admin State, District and Deposit Number. Agreements between agencies will have to be established to facilitate the sharing of data; update procedures and the data element code conversion must be identified. Mining activities, material sales and petroleum extraction activities will be associated with the deposit record.

I/O # 1102

Mineral Deposit Description

Entered as new deposits are discovered. Should be a deposit record for each mining or material sales activity.

State, Admin	0100 0004
District	0100 0543
Deposit #	0100
County	" 0546
District Congressional	" 0547
Planning Unit	" 1075
Location	
Meridian	" 1703
Township	" 1695
Range	" 1699
Section	" 2501
Legal Description Aliquot Part	121 2502
Latitude	100 1236
Longitude	100 1237
UTM Coord.	100 7515
Type Rock Wall Alteration	0111 2263
Degree Rock Wall Alteration	" 2264
Ore Controls	" 2265
Shape Ore Body	" 2266
Mode of Origin	" 2267
Type of Ore Body	" 2268
Porosity Formation	" 2270
Relationship to Ore	" 2271
Name, Rock	" 2272
Density, In Situ Rock	" 2273
Relationship, Mineralization to Deformation	" 2274
Age, Deformation	" 2275
Deformation, Type	" 2276
Age Modifier, Geologic Age	" 2282
Amount, Mineral	" 2283
Support Characteristic	" 2284
Basin, Geologic	" 2295
District, Mining	" 2301
Commodity, Mineral	" 2303
Topography of Deposit Area	" 2310
District, MESA	" 2322
Number of Reservoirs	" 2329
Original Oil in Place	" 2333
Acreage, Total Proven	" 2335
Wells, Total Field	" 2351
Number of Flowing Wells	" 2352
Number of Artificial Lift Wells	" 2352
Number of Gas Wells	" 2354
Maximum Field Wells	" 2355
Spacing Well	" 2356
Area, Maximum Surface Disturbed	" 2370

I/O # 1102

Mineral Deposit Description (continued)

Discovery Mode	0111	2372
Years Discovery	"	2373
Method, Exploration	"	2374
Extent, Exploration Method Employed	"	2375
Extent, Exploration Method Supports Resource Eval.	"	2376
Year Exploration Work Done	"	2377
Age, Geologic Mineralization	"	2379
Strike of the Mineralized Zone or Outcrop	"	2399
Direction, Dip	"	2400
Width, Average Deposit	"	2401
Length Average Deposit	"	2402
Name, Geologic Feature	"	2407
Name, Mineral	"	2410
Class, Mineral	"	2411
Size, Grain	"	2412
Quantity, Mineral Resources	"	2417
Year of Evaluation	"	2419
Formation, Producing	"	2434
Permeability, Formation	"	2436
Law, Mining, In-Effect	"	2473
Resources, Reliability Category	"	2474
Area, Known Leaseable	"	2475
Exploitation, Economic Feasibility	"	2476
Disposal, Category, Mineral	"	2477
Sensitivity, Environmental	"	2478
Characteristics, Restriction Environmental	"	2479
Degree of Environmental Sensitivity	"	2480
Geologic Unit or Aquifer	0144	5104
Acres, NRL	0100	6594
Acres, State	"	6595
Acres, Private	"	6596
Square Miles, Data Unit	0100	6605
Date, Inventoried/Surveyed	0100	6630
Date, Recorded	0100	8518

Prog. Area:
Prep. By:
Date:

I/O # 1103

DATA SOURCE DESCRIPTION
(DATA BASE MAINTENANCE)

TITLE/DESIGNATION: Mineral Resource Overlay

FORM: Graphic - Maps upon which mineral occurrences are annotated.

PREPARATION RESPONSIBILITY: Minerals Staff in the District would annotate locatable, leasable and saleable mineral areas on appropriate maps. Known leasing areas would be identified from USGS sources.

FORMAT: See attached sample. Lines will be coded as necessary.

DATA ENTRY PROCEDURE: To be determined.

FREQUENCY OF UPDATE: Upon discovery of a mineral occurrence, i.e., approximately two to twelve times per year per District.

VOLUME OF UPDATE: 1-3 mineral areas on 1-2 maps per update.

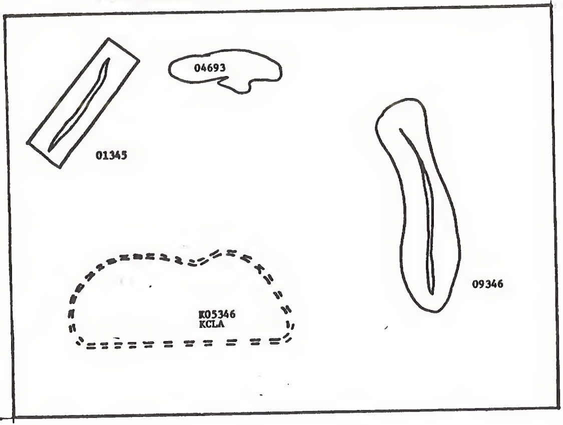
ARCHIVING REQUIREMENTS: None

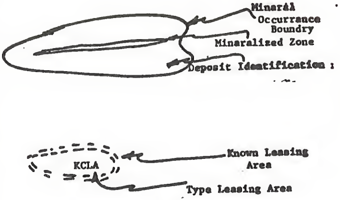
ACCESS LIMITATIONS: Updates by Minerals staff only.

SPECIAL EDIT/AUDIT/VALIDATION REQUIREMENTS: None

REMARKS: This will input the Known Leasable areas and mineral occurrences for the area of interest.

Mineral Resource Overlay I/O #1103





Where:

KCLA=Coal
KCS =Geologic Structure
KGRA=Geothermal

State	.05
District	.01
Resource Area	.02
Planning Unit	.06

I/O # 1103 RESOURCE CLASS OVERLAY

State Administrative	0100 - 0004
District	0100 - 0543
Resource Area	0100 - 0418
Planning Unit	0100 - 1075
Boundary Deposit	0111 - 2364
Commodity, Mineral	0111 - 2303
Exploitation, Economic Feasability	0111 - 2476

Prog. Area: 0111
Prep. By: JM
Date:

I/O # 1104

DATA SOURCE DESCRIPTION
(DATA BASE MAINTENANCE)

TITLE/DESIGNATION: Evaluation and Analysis Sheet

FORM: Coding Sheet

PREPARATION RESPONSIBILITY: Minerals Staff in the District

FORMAT: Input forms to be developed; data elements listed on attached sheet.

DATA ENTRY PROCEDURE: To be determined.

FREQUENCY OF UPDATE: 1 per month per District.

VOLUME OF UPDATE: 1 to 10 analyses per District.

ARCHIVING REQUIREMENTS: Important data will be moved to remarks section if it is necessary to retain it.

ACCESS LIMITATIONS: Updates by Minerals staff only. No security limitations except for proprietary-type information.

SPECIAL EDIT/AUDIT/VALIDATION REQUIREMENTS: Reject input if the deposit data is not already in the data base.

REMARKS: This sheet will allow input of the analysis data for any type of commodity. Total volume of about 500,000 analyses. For coal data, prime source is Bureau of Mines Coal Analysis Group, feeding analytical data into their FAS system. Other fuels data is also available in FAS. Other minerals data is available in the MAS system. Numerous commercial testing laboratories exist; the results are frequently published and used by BuMines in the absence of other analytical data. Every effort will be made to utilize automated data from the FAS and MAS systems, if possible.

I/O # 1104 ANALYTIC DATA

Sample Number	0111 - 2396
Commodity, Mineral	0111 - 2303
Kind of Sample	0111 - 2319
Condition of Sample	0111 - 2447
Date Sample Collected	0100 - 6562
Date of Analysis	0100 - 7308

Constituent Code	0111 - 2391
Name, Constituent	0111 - 2385
Amount, Constituent	0111 - 2390
Unit of Measure, Constituent	0111 - 2389

Prog. Area:
Prep. By:
Date:

I/O # 1105

DATA SOURCE DESCRIPTION
(DATA BASE MAINTENANCE)

TITLE/DESIGNATION: Mine/Well Data

FORM: Coding Sheet

PREPARATION RESPONSIBILITY: Minerals Staff in District

FORMAT: Input forms to be developed; Data Elements listed on attached sheet.

DATA ENTRY PROCEDURE: To be determined.

FREQUENCY OF UPDATE: 1/6 months/District.

VOLUME OF UPDATE: 0 to 4 new mines per District.

ARCHIVING REQUIREMENTS: None

ACCESS LIMITATIONS: Updates by Minerals Staff only.

SPECIAL EDIT/AUDIT/VALIDATION REQUIREMENTS: Mine/Production data will be maintained independently of deposit data. The deposit ID will be used to make the cross-reference. Some cost data will be confidential and require restricted access.

REMARKS: This is the input sheet for mine and well data.

I/O # 1105 MINE / WELL DATA

MINE DATA

State, Administrative	0100 - 0004
District	0100 - 0543
Mine Number	0111 - 2395
Serial Number	0121 - 2554
Deposit Number	0111 - 2378
Classification, Security	0111 - 2307
Acreage, Mineral Protection	0111 - 2469
Elevation	0100 - -431
County	0100 - 0546
District, Congressional	0100 - 0547
Name, Owner/Operator	0111 - 2288
Address Mailing	0100 - 0934
Address, City	0100 - 0935
Planning Unit	0100 - 1075
Zip Code	0100 - 1656
Location	
Meridian	0100 - 1703
Township	0100 - 1695
Range	0100 - 1699
Section	0100 - 2501
Legal Desc., Aliquot Part	0121 - 2502
Latitude	0100 - 1236
Longitude	0100 - 1237
UTM Coordinates	0100 - 7515
Hardness, Ore Body	0111 - 2256
Hardness, Overburden	0111 - 2257
Rock Mass Characteristics	0111 - 2258
Rock Hardness and Water Conditions	0111 - 2259
Minimum Thickness Unconsolidated Material	0111 - 2260
Minimum Depth to Mineralized Zone	0111 - 2261
Average Depth to Mineralized Zone	0111 - 2262
Overall Grain Size	0111 - 2269
Average Depths of Shafts	0111 - 2285
Depth, Formation	0111 - 2287
Number of Inclines	0111 - 2289
Average Length of Adits	0111 - 2290
Number of Adits	0111 - 2291
Total Workings	0111 - 2292
Type, Completion	0111 - 2298
Factor, Recovery	0111 - 2299
Status, Operational	0111 - 2304
Type of Mining	0111 - 2305
Name, Mineral Property	0111 - 2308
Name, Mineral Property Previous	0111 - 2309
M.E.S.A. Identification	0111 - 2315
Labor Supply	0111 - 2316

MINE / WELL DATA
Continued

Holding, Mineral type	0111 - 2317
Life, Remaining	0111 - 2318
Status Owner/Operator	0111 - 2320
Owner Percent	0111 - 2325
Operational Status, Costing	0111 - 2327
Water Saturation	0111 - 2330
Net Pay, Reservoir	0111 - 2331
Drive, Reservoir	0111 - 2332
Facility, Daily Mineral Capacity	0111 - 2337
Cost, Unit Production	0111 - 2338
Cost, Capital	0111 - 2339
Operating Days per Year	0111 - 2340
Shifts per day	0111 - 2341
Area, Surface Mine	0111 - 2342
Bench Height	0111 - 2343
Slope, Maximum Pit	0111 - 2344
Volume, Stripping	0111 - 2345
Grade, AverageMineable	0111 - 2346
Percent, Operating capacity	0111 - 2357
API Control Number	0111 - 2358
Precision, elevation	0111 - 2360
Datum, Elevation	0111 - 2360
Initial Potential, Oil	0111 - 2361
Initial Potential, Gas	0111 - 2362
Initial Potential, Water	0111 - 2363
Distance of Road Needed	0111 - 2366
Distance, Transportation	0111 - 2367
Distance to Adequate Water	0111 - 2368
Distance to Adequate Electricity	0111 - 2369
Precision to Point Location Measurement	0111 - 2381
Average Length of Inclines	0111 - 2386
Number of Shafts	0111 - 2387
Average Slope of Inclines	0111 - 2388
Condition of Workings	0111 - 2393
Thickness, Average Mineral	0111 - 2403
Thickness, Maximum Overburden	0111 - 2404
MIning Method	0111 - 2420
Percent, Waste Rock	0111 - 2421
Factor, Swell	0111 - 2422
Type, Drill Hole	0111 - 2423
Name, Authorized User	0100 - 2424
Depth, Maximum Drilled	0111 - 2428
Total, Intervall Drilled	0111 - 2431
Formations Penetrated	0111 - 2432
Depth to Oldest Formation Penetrated	0111 - 2433
Date Drilling Commenced	0111 - 2437
Date Drilling Terminated	0111 - 2438
Tests Drilled	0111 - 2442
Acreage, Mineral Production	0111 - 2469
Year First Production	0111 - 2482
Year Last Production	0111 - 2483

I/O # 1105

MINE / WELL DATA
Continued

Period, Estimated Production	0111 - 2485
Status, Mining System	0111 - 2486
Method Mining	0111 - 2487
Thickness, Average Overburden	0111 - 2488
Thickness, Percent Specified	0111 - 2489
Shipping Point	0111 - 2497
Destination, Freight	0111 - 2500
Name of WAter	0100 - 4061
Period of Water AVailability	0100 - 8512
Address Name	0100 - 8600
Type, Water	0100 - 2721
Transportation Systems	0171 - 7518
Destination, Facility TYpe	0111 - 2300
Mode, Transportation	0111 - 2326
Distance to Processing Facility	0111 - 2336
Costing, Option	0111 - 2494

Prog. Area: ____________
Prep. By: ____________
Date: ____________

I/O # 1106

DATA SOURCE DESCRIPTION
(DATA BASE MAINTENANCE)

TITLE/DESIGNATION: Production Data

FORM: Coding Sheet for BLM-generated data. Possibly magnetic tape for data from USGS and BuMines.

DESCRIPTION: To describe the annual production of mines and wells discussing the amount, value, markets and commodity.

PREPARATION RESPONSIBILITY: Minerals specialist at Distict Office will augment data provided by BuMines and USGS.

FORMAT: To be developed; will include data elements on attached sheet.

DATA ENTRY PROCEDURE: To be determined.

FREQUENCY OF UPDATE: Annually

VOLUME OF UPDATE: 100 to 1,000 minerals producers per District.

ARCHIVING REQUIREMENTS: Data will be archived yearly. Current data will be retained in active data base; older data maintained on magnetic tape.

ACCESS LIMITATIONS: Only the Minerals Staff may update or modify those records for which they are responsible. Other agency data will be updated by the respective agency.

SPECIAL EDIT/AUDIT/VALIDATION REQUIREMENTS: Mineral production data may be considered proprietary requiring restriction of access, especially when cost or reserves data are involved. This may not apply to totals.

REMARKS: This may be difficult data to collect. Data will be stored by year and commodity and associated with the mine or well data record. If magnetic tape is not available, data can be extracted manually from the other agency publications.

I/O # 1106 PRODUCTION DATA ELEMENTS

State, Administrative	0100 - 0004
State, Geographic	0100 - 0690
District	0100 - 0543
Serial # Lands Records Case Management	0121 - 2554
Commodity, Mineral	0100 - 2303
Amount of Annual Production	0111 - 2460
Value of Annual Production	0111 - 2461
Year of Production	0111 - 2397
Unit of Measure, Production	0111 - 2462
Price, Unit Selling	0111 - 2279
Market Disposition	0111 - 2321
Use, Consumer	0111 - 2323
Percent, Market Disposition	0111 - 2324
Classification, Security	0111 - 2307
Rate, Depletion	0111 - 2311
Type of Mineral Receipt	0111 0 2471

Prog. Area: 0111
Prep. By: HFY
Date: 7-15-77

I/O # 1107

DATA SOURCE DESCRIPTION
(DATA BASE MAINTENANCE)

TITLE/DESIGNATION: Mineral Material Sales

FORM: Mineral Disposal Transaction Form

DESCRIPTION: Identification of purchaser, quantity, value, commodity, type of transaction.

PREPARATION RESPONSIBILITY: Minerals personnel in Area, District, or State Offices

FORMAT: To be developed as a modification of the two attached forms-- 5450-5 and 5440-13.

DATA ENTRY PROCEDURE: To be determined.

FREQUENCY OF UPDATE: Update once per month per District.

VOLUME OF UPDATE: 5 to 10 sales per District.

ARCHIVING REQUIREMENTS: Archive all but data for the current year.

ACCESS LIMITATIONS: Minerals personnel or others assigned to this function.

SPECIAL EDIT/AUDIT/VALIDATION REQUIREMENTS: Form to be developed will incorporate financial data but access must be given to Minerals personnel for production data.

REMARKS: Material sales data will be associated with a Mineral Activity Site record and a deposit record.

I/O #1107

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

VEGETAL OR MINERAL MATERIAL SALES REPORT

BLM MANUAL REFERENCES

Instructions – Section 5445
ADP Codes – Section 1265, Appendix 1

Number in parenthesis denotes keypunch column.

INSTRUCTIONS INSIDE BACK COVER

INITIAL SECTION	1. ☐ New ☐ Correction ☐ Production ☐ Delete (1)	2. State (3–4) – –	3. District (5–6) – –	4. Planning or Master Unit (7–9) – – –	5. Land Ownership Status (10) –	6. County (11–13) – – –	7. Congressional District (14–15) – –	8. ADP CONTROL NUMBER Fiscal Year (16) –
								8. ADP CONTROL NUMBER Number (17–20) – – – –

			DATE						
			SALE		EXPIRATION *(minerals only)*				
SECTION I (1)	9. Purchaser Name, Firm or Individual (21–44)	10. Address *(City, State, Zip Code)* (45–64)	11. Month (65–66) – –	12. Year (67–68) – –	13. Month (69–70) – –	14. Year (71–72) – –	15. Contract/Permit Number (73–79) – – – – – – –	Modification Number (80–82) – – –	16. Timber Sale Plan Tract Number (83–88) – – – – – –

SECTION II (2)	17. Purchaser or Permittee (21) Class 1 – Small 2 – Big 3 – Government –	18. Bid Code (22) 1 – Oral 3 – Set aside 2 – Sealed 4 – Nonadvertised –	19. Number of Qualified Bidders (23–24) – –	20. Number of Active Bidders (25–26) – –	21. Next Highest Bid *(Advertised sales only)* (27–37) – – –, – – –, – – – – –
	22. Total Sales Price or Value *(Nearest cent)* (38–48) – – –, – – –, – – –. – –	23. Type Sale (49) 1 – Advertised 4 – No Bid 2 – Free Use 5 – Trespass 3 – Negotiated 6 – Material Site R/W –	24. Justification Code *(Negotiated Sales)* (50) –	25. Consolidated Christmas Tree Sales (51–54) – – – –	

SECTION III Enter only if sale or permit is for forest products convertible to board feet	26. Cruise or Scale (55) 1 – Cruise 2 – Scale –	27. Clear-cut Area (56–59) –, – – –	28. Clear-cut Net Volume (60–67) – –, – – –, – – –	29. Partial Cut Area (68–71) –, – – –	30. Partial Cut Net Volume (72–79) – –, – – –, – – –
			ROAD CONSTRUCTION *(Nearest 0.1 Mile)*		
	31. Regulated Net Volume *(nearest bd. ft.)* (80–87) – –, – – –, – – –	32. Nonregulated Net Volume *(nearest bd. ft.)* (88–95) – –, – – –, – – –	33. Permanent Surfaced (96–98) – –. –	34. Permanent Unsurfaced (99–101) – –. –	35. Temporary Spur (102–104) – –. –

Form 5440–13 (July 1972)

I/O # 1107

State	NO. 104426
District	
Date of sale	

Name of Purchaser *(first, middle, last)*

Address *(include zip code)*

Subject to conditions and requirements on reverse

KIND OF PRODUCT	EST. QTY. (Units)	RATE UNIT	PRICE
			$
		TOTAL	$

Purchaser is liable for total purchase price shown above. There will be no refunds. Additional payment, if any, will be made in accordance with Sec. 1(c) on reverse. This contract is made under terms of Sec. 1( ) and the stipulations indicated on reverse

Contract expires *(date)*	← ALL MATERIALS MUST BE REMOVED PRIOR TO THIS DATE

Location of sale:

RECEIVED AS PAYMENT IN FULL

ACCOUNT	COUNTY	AMOUNT
P. D. (5881)		$
O & C (5882)		
CBWR (5897)		
Road Maintenance Fee		
(143099) – (14 X 5030) *(Cross out one)*		

Purchaser certifies that he is twenty-one years of age or older and a citizen of the United States.

Signature of Purchaser

Signature of Authorized Officer

Form 5450-5 (November 1976)

DISTRICT

I/O #1107

MATERIAL SALES DATA

State, Administrative	0100 - 0004
District	0100 - 0543
Resource Area	0100 - -418
Planning Unit	0100 - 1075
Serial Number Lands Records Case Mgmt.	0121 - 2554
Date Issued i.e. Date of Sale	0100 - 1905
Name, Purchase/Recipient	0100 - 2424
Address, Mailing	0100 - 0934
Address, City	0100 - 0935
Zip Code	0100 - 1656
Date Activity Ends i.e. Expiration Date	0132 - 0998
Commodity i.e. Product	0111 - 2303
Quantity Mineral Resources i.e. Number of Units	0111 - 2417
Price, Unit Selling	0111 - 2279
Unit, Resource Quantity i.e. Unit of Measure	0111 - 2459
Date Activity Begins	0132 - 0997
Address, Name	0100 - 8600
Congressional District	0100 - 0547
County	0100 - 0546
Land Ownership Status	0121 - 2532
Contract or Permit Number	0111 - 2398
Amount of Bid	0111 - 2405
Highest Bid	0111 - 2406
Next Highest Bid	0111 - 2408
Type of Disposition	0111 - 2409
Type of Bid	0111 - 2413
Type of Disposal Area	0111 - 2394
Disposition Method	0111 - 2416
Total Value	0111 - 2418
Number of Bidders	0111 - 2425

Prog. Area: ______________
Prep. By: ______________
Date: ______________

I/O #1108

DATA SOURCE DESCRIPTION
(DATA BASE MAINTENANCE)

TITLE/DESIGNATION: Facility Data (Processing)

FORM: Coding Sheet

DESCRIPTION: Describe the processing facilities located in the Data Area giving location, owner/operator, capacity, processing method and facility cost data.

PREPARATION RESPONSIBILITY: Minerals Staff in District coordinated by the Minerals Staff in State Office.

FORMAT: To be determined - See attached list of data elements.

DATA ENTRY PROCEDURE: To be determined.

FREQUENCY OF UPDATE: One per 6 months per District.

VOLUME OF UPDATE: 1-2 sites/update.

ARCHIVING REQUIREMENTS: None

ACCESS LIMITATIONS: Update by State. Minerals staff only.

SPECIAL EDIT/AUDIT/VALIDATION REQUIREMENTS: The processing facilities for a mine in a District may reside outside the District; Therefore, to prevent duplication of update and possible conflict of data, the updates should be coordinated by the State or possibly Service Center Mineral Staff.

REMARKS: Bureau of Mines may be prime source of data. Access to "company-confidential" must be restricted.

I/O # 1108 PROCESSING DATA

State, Geographic	0100 - 0690
County	0100 - 0546
Identification, Facility	0111 - 2395
Name, Owner/Operator	0111 - 2288
Address, Mailing	0100 - 0934
Address City	0100 - 0935
Zip Code	0100 - 1656
Meridian	0100 - 1703
Township	0100 - 1695
Range	0100 - 1699
Section	0100 - 2501
Legal Description	0100 - 2502
Latitude	0100 - 1236
Longitude	0100 - 1237
UHM Coordinate	0100 - 7515
Town Nearest to Mill	0111 - 2334
Grade, Process Feed	0111 - 2347
Method, Beneficiation	0111 - 2348
Percent Recovery	0111 - 2349
Amt. of Beneficiation Product Shipped	0111 - 2350
Preparation Type	0111 - 2446
Capacity, Estimated Plant	0111 - 2495
Cost, Estimated Unit Production Plant	0111 - 2496
Cost, Estimated Capital Plant	0111 - 2497
Material Shipped Percent	0111 - 2296
Type Mineral Facility	0111 - 2296
Status Operational	0111 - 2304
Classification, Security	0111 - 2307

Prog. Area: ____________
Prep. By: ____________
Date: ____________

I/O #1109

DATA SOURCE DESCRIPTION
(DATA BASE MAINTENANCE)

TITLE/DESIGNATION: Regional Geologic Features

FORM: Annotated Base Map

DESCRIPTION: Map showing geologic features and anomalies that might be of interest to resource staffs for planning purposes.

PREPARATION RESPONSIBILITY: Minerals staff in coordination with Watershed staff at the District. In addition, Recreation may have input.

FORMAT: Annotated map will contain the appropriate symbols for such features as shown on the attached sheet.

DATA ENTRY PROCEDURE: To be developed.

FREQUENCY OF UPDATE: 1/year/District, i.e., as new anomalies, etc., are discovered.

VOLUME OF UPDATE: 1-5 new anomalies, etc., per update.

ARCHIVING REQUIREMENTS: There may be some archiving (or deletion) of identified conditions as the density of the geologic condition increases.

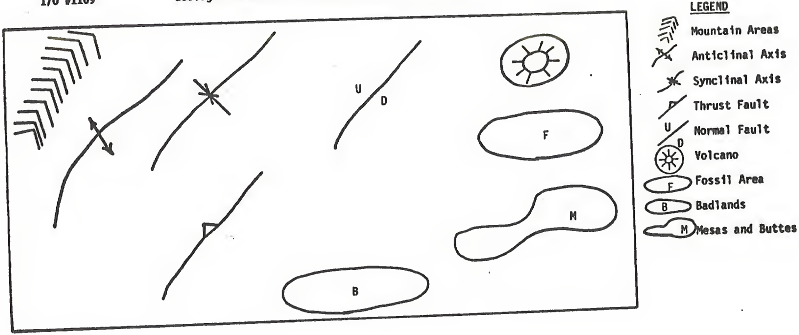
ACCESS LIMITATIONS: Minerals staff only will update.

SPECIAL EDIT/AUDIT/VALIDATION REQUIREMENTS:

REMARKS: The USGS geologic maps contain much more than is needed for planning, therefore a synopsis will be developed showing the important features. Geologic features will lie in the categories of structure, lithologies or rock types, geomorphology and observed anomalies.

I/O #1109

Geologic Features Overlay West Park Planning Unit



Prog. Area: Minerals
Prep. By: HFY
Date: 8/15/77

I/O #1110

DATA SOURCE DESCRIPTION
(DATA BASE MAINTENANCE)

TITLE/DESIGNATION: Reference Data

FORM: Coding Sheet

DESCRIPTION: Provides for collection of source information and comments about those sources which are used to complete other coding forms used to maintain the data uase.

PREPARATION RESPONSIBILITY: Minerals Staff in the District or Resource Area Office that complete the coding forms used to build the data base.

FORMAT: To be determined but will contain the data elements on the attached list.

DATA ENTRY PROCEDURE: To be developed.

FREQUENCY OF UPDATE: After initial entry two to three bibliographic updates per district per year. These will be entered as required.

VOLUME OF UPDATE:

Five to ten additions or changes per district.

ARCHIVING REQUIREMENTS: None

ACCESS LIMITATIONS: Update by minerals staff only.

SPECIAL EDIT/AUDIT/VALIDATION REQUIREMENTS: None

REMARKS:

This will be used to store the sources used to complete the description of the particular data base part that is being updated.

DATA ELEMENTS

	I/O #1110
State	0100-0690
District	0100-0543
Resource Area	0100-0418
Reference Source Author	0100-2464
Reference Source Publisher	0100-2466
Reference Source Form	0100-2202
Reference Source Title	0100-2465
Reference Source Date	0100-2467
Comments, Miscellaneous	0100-2490

DATE LOANED	BORROWER	OFFICE	DATE RETURNED

* G.P.O.: 1985-479-080

Bureau of Land Management
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